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A NEW SPECIES OF *PSEUDOPYGMEPHORUS* (ACARI: PYGMEPHORIDAE) ASSOCIATED WITH COMMERCIAL MUSHROOM PRODUCTION

Aagje Hill and Kenneth L. Deahl

Abstract.—Both sexes of a new species of Pygmephoridae, *Pseudopygmephorus smileyi*, from horse manure around commercial mushroom production houses in Pennsylvania are described and figured.

Mites associated with commercial mushroom production were studied at the Beltsville Agricultural Research Center in 1976. Most of the mites were collected from compost and horse manure around and in the mushroom houses near Kennett Square, Pennsylvania. This work was done in collaboration with the Systematic Entomology Laboratory, IIBIII, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland 20705.

Several species of mites belonging to the family Pygmephoridae and Tarsonemidae were found. Among them were males and females of an undescribed species of *Pseudopygmephorus*, and these are described here. As far as we know, this is the third species in this genus for which males are known. The terminologies of Mahunka (1973) and Norton and Ide (1974) are used for the idiosomal structures, leg chaetotaxy and solenidiotaxy.

Pseudopygmephorus smileyi Hill and Deahl, new species

The female of this species resembles the female of *Pseudopygmephorus sellnicki* (Krczal, 1959) in having similarly curved dorsal terga. It can be separated from the latter species by the absence of strong spinelike setae on tarsi II and III. Smiley (1978) describes the male of *P. sellnicki*. The male of *P. smileyi* differs from the male of *P. sellnicki* in having slender setae rather than strong spines on tarsi II and III.

Female
Figs. 1–6

Gnathosoma (Fig. 1).—Slightly elongate with 2 pairs of simple dorsal setae, anteromedial pair longest. Palpus with 1 segment, dorsally with 2 pairs of simple setae, ventrally with 1 small solenidion and a larger sucking-like apparatus.

Dorsum (Fig. 1).—Propodosoma convex anteriorly, with concave margins, rather small in comparison to body. Exobothridial setae (exo) longer than distance between bases. Interbothridial setae (in) very small, without spicules. Rostral setae lacking. Setae c_2 on tergum I longer than exo setae;

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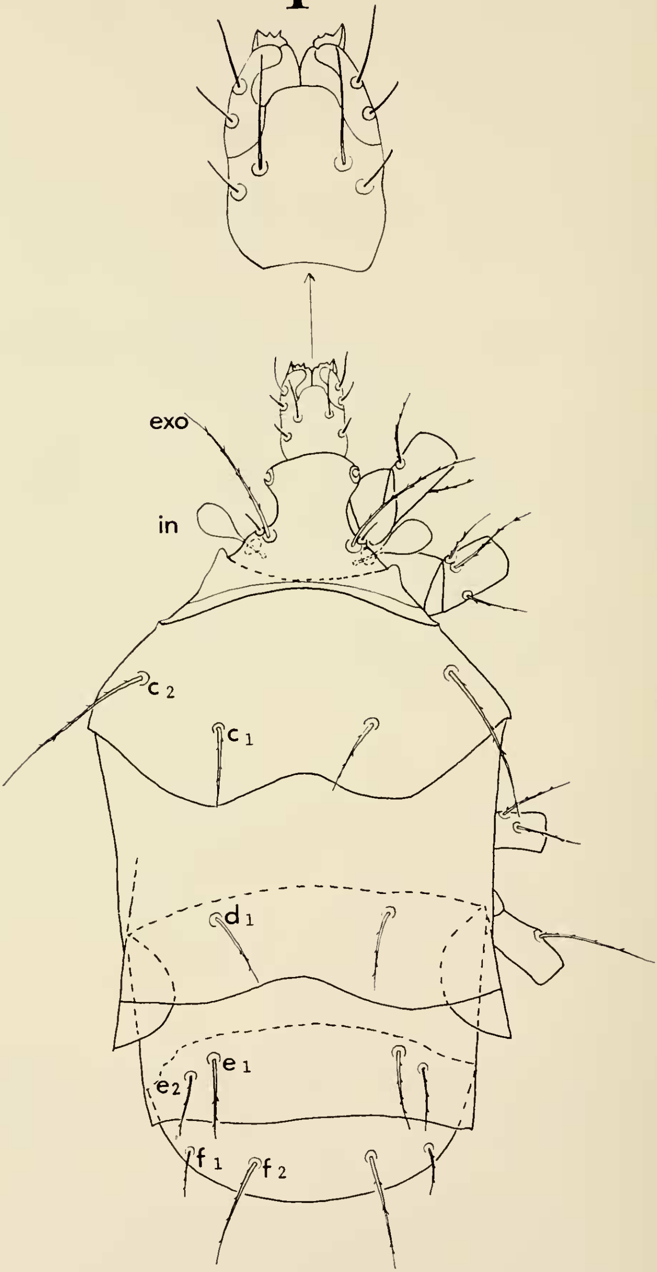


Fig. 1. *Pseudopygmephorus smileyi*, female with gnathosoma enlarged, dorsal view.

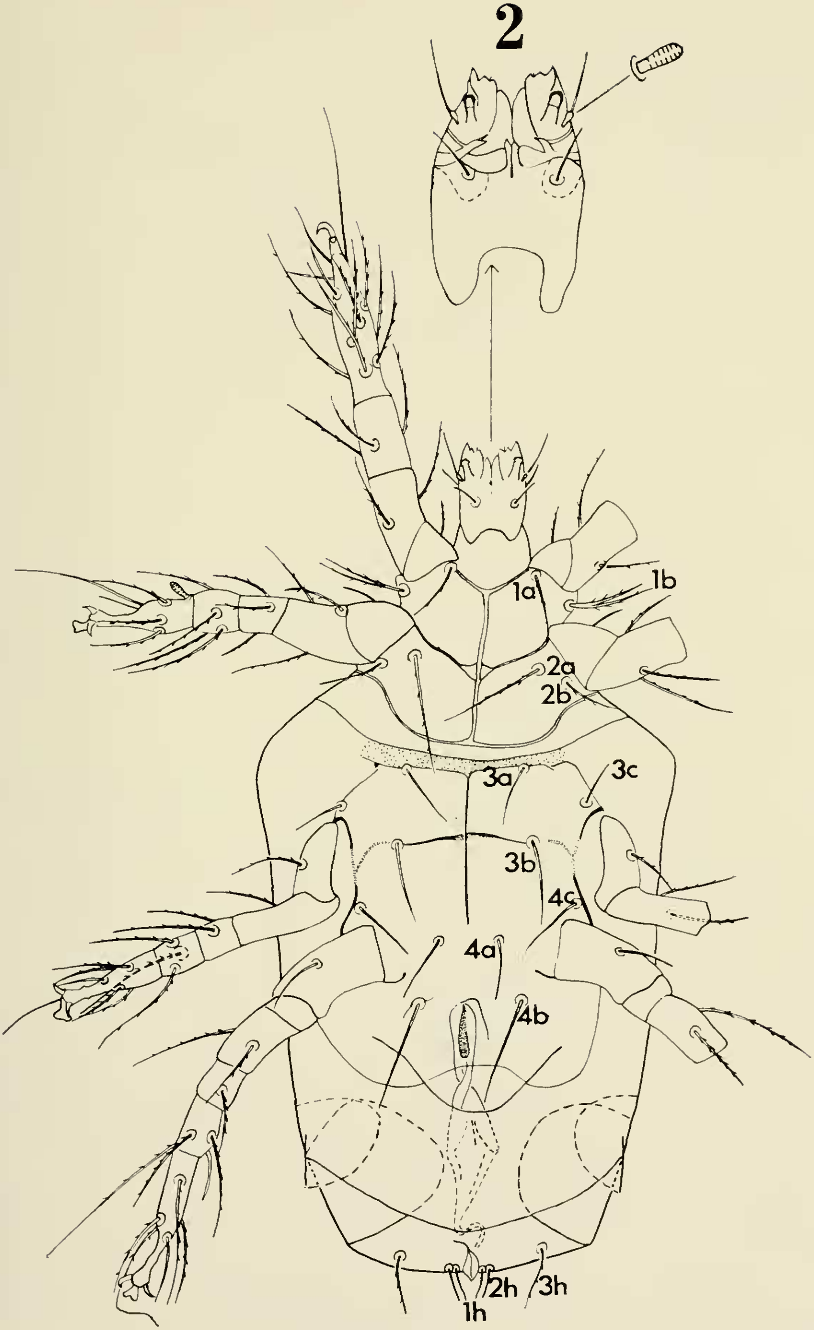
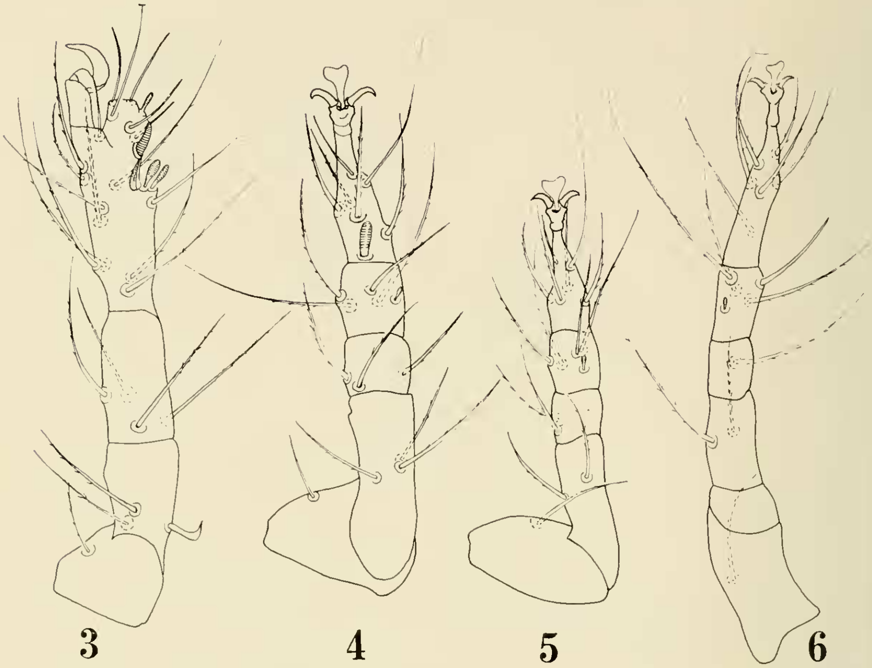


Fig. 2. *Pseudopygmephorus smileyi*, female with gnathosoma enlarged, ventral view.



Figs. 3–6. *Pseudopygmephorus smileyi*, legs I–IV of female.

setae c_1 on tergum I, d_1 on tergum II, and e_1 on tergum III about equal and ½ the length of c_2; setae f_1 somewhat longer than ½ the length of setae c_1 and f_2 longer than c_1. All setae spiculate, unless otherwise stated.

Venter (Fig. 2).—Apodemes II longer than I, both connecting with anteromedian apodeme; anteromedian apodeme connecting with transverse apodeme; posteromedian apodeme connecting with apodemes III and IV; 5th apodeme lacking. Propodosomal setae 1a spiculate, somewhat shorter than distance between their bases; setae 1b bifurcate and spiculate; setae 2a spiculate and longer than 1b; setae 2a twice as long as 2b. Hysterosomal setae 3a and 3c not as long as 3b; setae 3b thicker than 3a and 3c; setae 4a and 4c subequal in length; setae 4b longer than other hysterosomal setae. Caudal setae 3h longest and spiculate; setae 1h and 2h short and slender. All hysterosomal setae smooth, unless otherwise stated.

Chaetotaxy and solenidiotaxy of legs.—Leg I (Fig. 3): Femur, genu, tibiotarsus: 3-4-12 + 4 solenidia + 4 eupathidia. Leg II (Fig. 4): Femur, genu, tibia, tarsus: 3-3-4 + 1 solenidion, –6 + 1 solenidion. Leg III (Fig. 5): Femur, genu, tibia, tarsus: 2-2-4 + 1 solenidion, –6. Leg IV (Fig. 6): Femur, genu, tibia, tarsus: 2-1-4 + 1 solenidion, –6.

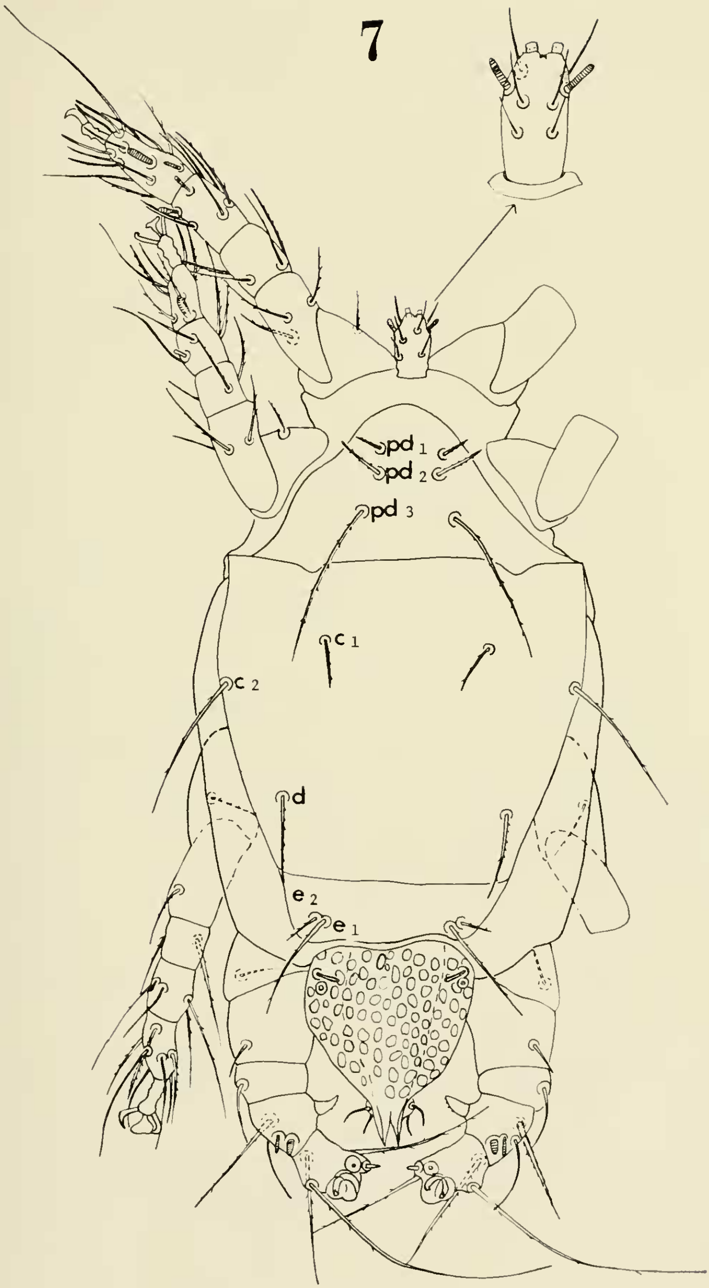


Fig. 7. *Pseudopygmephorus smileyi*, male with gnathosoma enlarged, dorsal view.

Measurements of type-material.—Holotype: Idiosoma plus gnathosoma 275 μ long and 126 μ wide. Idiosoma of female paratypes (10) averages 272 (225–320) μ long and 136 (167–113) μ wide.

Male
Figs. 7–12

The males vary in body size and in the size of the leg setae. Venter and dorsum are drawn from different specimens.

Gnathosoma (Fig. 7).—Small, elongate, with 2 pairs of simple dorsal setae, 1 pair of solenidia, and 1 pair of simple ventral setae; anteriorly with oblong sucking-like apparatus. Palpi absent, chelicerae not visible.

Dorsum (Fig. 7).—Propodosomal shield rounded anteriorly; wider posteriorly than long; medially with 3 pairs of spiculate setae. Prodorsal setae pd_1 and pd_2, ¼ the length of pd_3; setae pd_3 more than 2× as long as pd_1 and pd_2 combined. Hysterosoma with 3 pairs of setae; c_1 short; c_2 more than 2× as long as c_1; d ½ the length of c_2. All hysterosomal setae spiculate. Opisthosomal setae e_1 and e_2 spiculate; e_2 located anteriorly. Solenidia and microsetae (ms) present on sculptured genital area.

Venter (Fig. 8).—Apodemes I short and connecting with anteromedian apodeme; apodemes II not connected with anteromedian apodeme; anteromedian apodeme connecting with transverse apodeme; posteromedian apodeme connecting with apodemes IV and V; apodemes III not connecting medially. Propodosomal setae 1a smooth and longer than weakly spiculate setae 1b. Coxal setae 2a longer and stronger than 2 b; both smooth. Setae 2a and 1a subequal in length; coxal setae 3a and 3c subequal in thickness and length; setae 3b longer than 3a and 3b; coxal setae 4a and 4c similar to 3a and 3c; setae 4b longer than 4a and 4c. Aedeagus (aed) as figured.

Chaetotaxy and solenidiotaxy of legs.—Leg I (Fig. 9): Femur (not figured), genu, tibia, tarsus: 3-4-6 + 2 solenidia, –9 + 2 solenidia + 4 eupathidia. Leg II (Fig. 10): Femur (not figured), genu, tibia, tarsus: 3-3-4 + 1 solenidion, –7 + 1 solenidion. Leg III (Fig. 11): Femur (not figured), genu, tibia, tarsus: 1-2-4 + 1 solenidion, –7. Leg IV (Fig. 12): Femur, genu, tibia, tarsus: 1-1-3 + 2 solenidia, –4.

Measurements of type-material.—Average of paratypes (5): length: 222 (184–242) μ; width 108 (74–127) μ.

Deposition of type-material.—Holotype: Female, USNM No. 3759 from horse manure, Keystone Mushroom Company, Coatesville, Pennsylvania, 31 August 1976, A. Hill and K. L. Deahl. Paratypes: Five ♂ and 18♀ in U.S. National Museum of Natural History, Washington, D.C.; 1♀ at Univer-

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Fig. 8. *Pseudopygmephorus smileyi*, male, ventral view.

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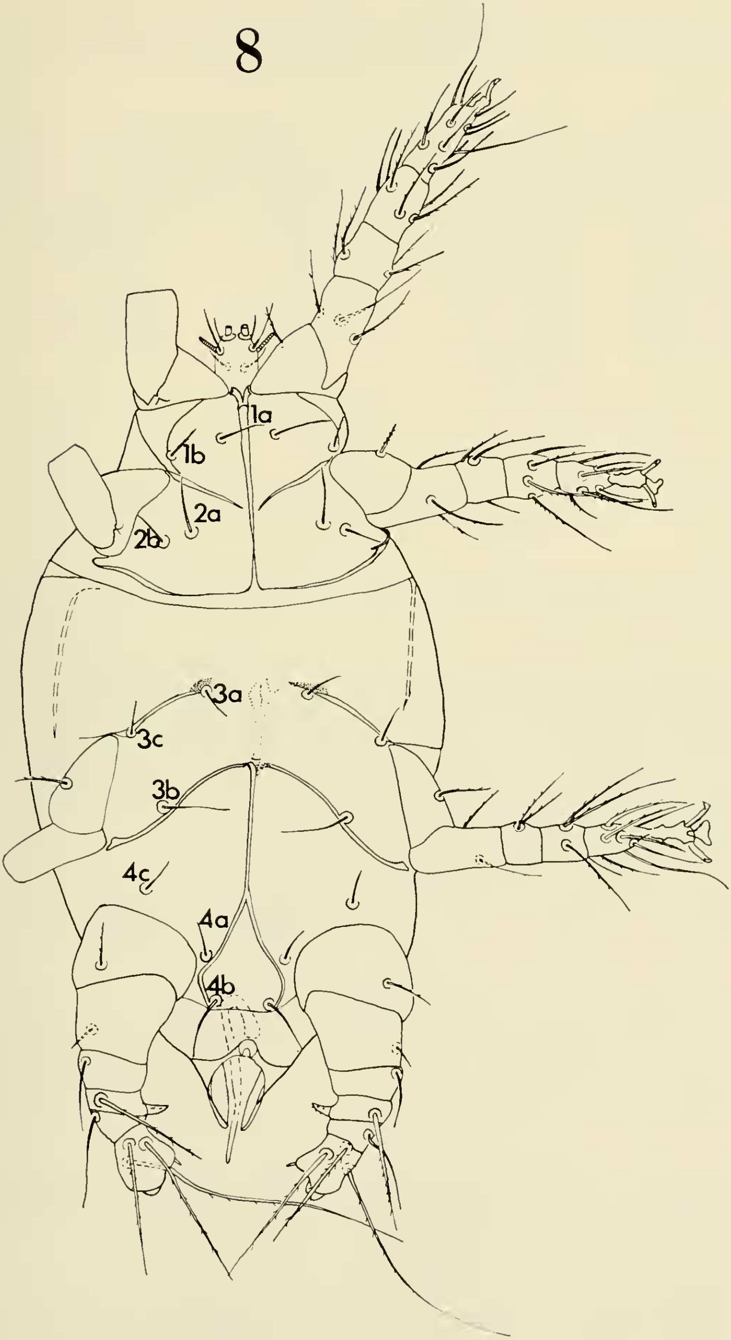

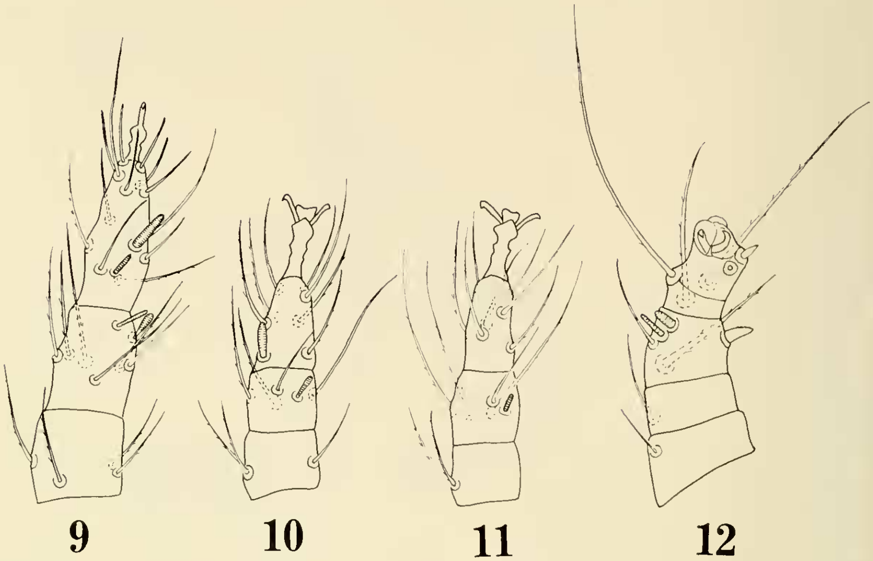

Figs. 9–12. *Pseudopygmephorus smileyi*, legs I–IV of male (femora not figured).

sity of Alabama, Tuscaloosa, Alabama; 1♀ in Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands; 1♀ in Acarology Laboratory, Ohio State University, Columbus, Ohio; 1♀ at Catholic University, Nijmegen, Netherlands; 1♀ in Hungarian Natural History Museum, Budapest, Hungary; 1♀ with U.S. Forest Service, Pineville, Louisiana; 1♀ in Zoologisches Institut and Zoologisches Museum, Universitat Hamburg, Hamburg, Germany; paratypes with the same data as holotype.

Etymology.— This species is named for Mr. Robert L. Smiley, Systematic Entomology Laboratory, IIBIII, USDA, Beltsville, Maryland.

Acknowledgments

We thank Edward W. Baker and Robert L. Smiley, Systematic Entomology Laboratory, IIBIII, Sci., USDA, for their help with writing this paper.

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NOTE

A NEW NAME FOR *COLPOCEPHALUM ABBOTTI* PRICE (MALLOPHAGA: MENOPONIDAE)

Price (1976. Syst. Entomol. 1:63) described *Colpocephalum abbotti*, and based the specific name on that of the ibis type-host, *Threskiornis aethiopica abbotti* (Ridgway).

Unfortunately, Kellogg (1899. Occas. Pap. Calif. Acad. Sci. 6:36) had previously described *Colpocephalum abbotti* for a louse taken from a gull, *Larus* sp. I had overlooked this earlier use of *C. abbotti* due to the fact that this name is now associated with the menoponid genus *Actornithophilus* Ferris and is further a junior synonym of *A. piceus* (Denny). A shortcoming in my card file failed to bring this to my attention. I thank Dr. R. C. Dalgleish, Rensselaerville, New York, for being more efficient and for pointing this homonymy out to me.

So, with *C. abbotti* Price a junior primary homonym of *C. abbotti* Kellogg, I hereby provide *Colpocephalum tandani* nomen novum to replace *C. abbotti* Price. This name is in recognition of the numerous excellent contributions of Dr. B. K. Tandan to Mallophaga taxonomy.

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